

Application No: 10/692,558
Amendment A
Reply to Office Action Dated 06/28/2007

Attorney Docket No: 3926.059

REMARKS

Claims 33-49 are now pending in the application. Claims 1-32 have been cancelled.

Preliminary Amendment Non-Compliant/Corrections

The preliminary amendment contains missing claims and duplicated claims due to a printing error. In order to avoid any confusion, claims 1-32 have now been cancelled and new claims 33-49 have been added.

Claim Objections

Claims 29-32 are objected to under 37 CFR 1.75(c) as being in improper form because these claims are repeated.

Claims 29-32 have now been cancelled.

Double Patenting

Claims 16-20 and 27-32 are provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claim 1-14 of co-pending Application No. US 2004/0124844 A1.

The present invention concerns a device for testing the functionality of loudspeakers integrated in a vehicle. In contrast, US 2004/0124844 A1 concerns a device for testing a rotating electric motor. They concern totally different electric components and thus there is no double patenting.

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Claim Rejections - 35 U.S.C. § 102

Claims 16-17, 19, 24, 28-29, and 32 are rejected under 35 USC 102(b) as anticipated by Taenzer et al. (US 6,603,860 B1).

The present invention concerns a device for testing loudspeakers installed in a vehicle. As described in paragraphs [0003], [0008], and [00010] of the specification of the instant application, the present invention is designed to test the functionality of loudspeakers located and installed in a vehicle. The installed loudspeakers are often not accessible because they are integrated in the vehicle under covering or integrated in the vehicle frames. It is not or only with large expense possible to dismount the loudspeakers for the test.

Taenzer et al. disclose a device and a method for testing a loudspeaker of a hearing aid device with a loudspeaker, which is located in an acoustic chamber 90 of a test box 90 and is thus distant from the position in the ear (see column 4, lines 22-37). A FM-transmitter 24 is brought into the acoustic chamber 90, which concurs with the hearing device so that the hearing device can be tested. The magnetic field 26 can be received and magnified with the help of the coil 20 and the amplifier 18 (see column 4, line 52 to column 5, line 8). The magnetic field changes received by the coil 20 are magnified and fed to a microphone 65 over the magnetic-to-acoustic converter 100 after a conversion into acoustic signals, whereby the acoustic signals produced by the magnetic-to-acoustic converter 100 are fed to a microphone 65 and are tested for their acoustic amplitude, acoustic frequency and acoustic spectrum (see column 4, lines 49-51).

In contrast, the present invention concerns a device for testing functionality of loudspeakers installed in a vehicle, which has an antenna for receiving the alternating electromagnetic fields of the loudspeaker, a unit for analysis of the received signals directly as electric signals and an output unit for signaling functionality.

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In the essence, the present invention differs from the hearing device monitoring system of Taenzer et al. in that in the present invention not hearing devices, which are removed from the ear and must be integrated in a test box, but rather loudspeakers installed in the vehicle, namely in their normal operating state and normal operating environment, are tested and thus no test box is necessary. The present invention further differs from Taenzer et al. in that it analyzes the electric signals received from the antenna directly and does not have to convert the electric or magnetic signals back to acoustic signals and then analyze the converted acoustic signals.

The present invention provides a very safe and reliable test of a loudspeaker that is installed, especially concealed, in a vehicle and is not accessible. This reliability cannot be provided by Taenzer et al. for a hearing device, especially because a back conversion into acoustic signals is carried out through the unit 100 of Fig. 2b and the converted acoustic signal is received with a microphone 65 and this signal is then tested for its acoustic characteristics. With each conversion and especially the analysis of the acoustic characteristics there are problems with the quality of the received signals immanently. That's why Taenzer et al. have the test box 80 with the acoustic chamber 90. These problems do not exist in the test device of the present invention. Therefore, the device for testing a hearing device described in Taenzer et al. is not suitable to apply to a vehicle because the loudspeakers in the vehicle cannot be removed and put in the test box 80 or in the acoustic chamber 90. According to the present invention, the test should be able to carried out for loudspeakers installed in a vehicle and it is especially possible to carry out a loudspeaker test during the ongoing assembly of the vehicle without requiring additional production time, which especially involve the risks of damages associated with a remove and an installation of a loudspeaker.

It is, therefore, clear that the present invention as recited in independent claims 33 and 49 is new and non-obvious and thus patentable over Taenzer et al. The dependent claims are believed to be patentable as well because they are ultimately dependent on claim 33. Note that
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all the claims have now been renumbered and independent claims 33 and 49 contain limitations to support the above discussion.

Claim Rejections - 35 U.S.C. § 103

Claims 18 has been rejected under 35 USC 103(a) as being unpatentable over Taenzer et al. and further in view of Bosnar (US 2003/0184301 A1).

Claims 30-31 have been rejected under 35 USC 103(a) as being unpatentable over Taenzer et al.

Claims 20 has been rejected under 35 USC 103(a) as being unpatentable over Taenzer et al. and further in view of Aab (US 5,500,585).

The dependent claims are believed to be patentable as well because they are dependent on claim 33, which is believed to be patentable as discussed above. Note the above claims have now been renumbered.

Bosnar and Aab describe totally different devices, which have nothing to do with a device for testing loudspeakers.

Bosnar describes an apparatus for measuring the conductivity of terrain in order to geologically analyze the terrain. Electric signals are sent in the terrain and received by the receiving antenna 18. The antennas are disposed on a boom 12 at a distance from one another, whereby the receiver coils are arranged at a distance from one another and parallel to one another (see Fig. 7 and the description in paragraph [0054] in the right column on page 5). Therefore, in contrast to the present invention, in Bosnar the receiver coils are not formed in different orientations, but rather in identical and parallel orientations.

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Aab discloses a device for detecting the movement of a movable component, which acquires the position of the movable component at two different positions and thus determines the speed and direction of the movement.

It is not clear why a person skilled in the art would combine Bosnar or Aab with a device for testing loudspeakers in hearing devices because Taenzer et al. do not contain any hint toward a device for measuring the conductivity of the terrain (Basnar) or a speed and direction measuring device according to Aab. Conversely, neither Bosnar nor Aab contains any hint of an application of the respective device in connection with a loudspeaker test device. Therefore, a combination of Bosnar or Aab with Taenzer et al. appears to be arbitrary. In addition, all three references lack the specific reference to testing the functionality of loudspeakers installed in a vehicle.

Favorable consideration and early issuance of the Notice of Allowance are respectfully requested. Should further issues remain prior to allowance, the Examiner is respectfully requested to contact the undersigned at the indicated telephone number.

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Respectfully submitted,



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